

CLAIMS:

1. A method of controlling a transport temperature control unit having cooling and heating cycles for cooling and heating a conditioned space within a transport, the method comprising:
 - 5 programming a first pre-programmed control mode into the unit;
 - configuring the unit such that a second control mode is programmable into the unit by an end user;
 - querying the end user to select the first pre-programmed control mode or to program the second control mode into the unit; and
 - 10 programming the second control mode into the unit by the end user when the second control mode is desired by the end user.
2. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting a fuel saver timer operable to decrease fuel consumption of the unit.
3. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting a high speed cool to low speed cool switch point at which point the unit switches between high speed cool and low speed cool in the conditioned space.

4. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting a restart temperature at which temperature the conditioned space restarts from a null condition.

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5. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting fan operation of the unit in the conditioned space.

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6. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting a low speed heat to low speed cool switch point at which point the unit switches between low speed heat and low speed cool
15 in the conditioned space.

7. The method as claimed in claim 1, wherein the step of programming the second control mode into the unit by the end user when the second control mode is desired by the end user further includes the step of selecting door switch options by the end user.

8. The method as claimed in claim 1, wherein the temperature control unit includes a programmable temperature range, the programmable temperature range being operable to control the operation of the unit in the conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode.

9. The method as claimed in claim 8, further including the step of querying the end user to select numerical temperature values for the programmable temperature range.

10 10. The method as claimed in claim 9, wherein the temperature values include a minimum temperature value and a maximum temperature value.

11. The method as claimed in claim 8, further including the step of selecting a priority for the programmable temperature range by the end user.

12. The method as claimed in claim 8, further including the step of selecting a unit control mode for the programmable temperature range.

20 13. The method as claimed in claim 12, wherein the step of selecting a unit control mode for the programmable temperature range further includes selecting one of a cycle sentry mode, a continuous mode and a cycle sentry/continuous select mode.

14. The method as claimed in claim 12, wherein the unit control mode is one of 25 a cycle sentry mode, a continuous mode and a cycle sentry/continuous select mode.

15. The method as claimed in claim 8, wherein the conditioned space is a first conditioned space and the programmable temperature range is a first programmable temperature range, the transport further comprising a second conditioned space and the 5 unit further comprising a second programmable temperature range, the second programmable temperature range being operable to control the operation of the unit in the second conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode.

10 16. The method as claimed in claim 15, wherein the first programmable temperature range and the second programmable temperature range both may be operable to utilize the first pre-programmed control mode or the second control mode.

15 17. The method as claimed in claim 15, further including the step of selecting a first unit control mode for the first programmable temperature range and a second unit control mode for the second programmable temperature range.

20 18. The method as claimed in claim 17, wherein the first and second unit control modes are one of a cycle sentry mode, a continuous mode and a cycle sentry/continuous select mode.

19. The method as claimed in claim 18, further including the step of selecting a first priority for the first programmable temperature range and a second priority for the second programmable temperature range by the end user.

20. The method as claimed in claim 19, wherein the first priority and the second priority are different priorities.

21. The method as claimed in claim 20, further including the step of
5 determining which of the first priority and the second priority are a higher priority.

22. The method as claimed in claim 21, further including the step of operating
the temperature control unit in the unit control mode corresponding to which of the first
priority and the second priority have the higher priority.

23. A method of controlling a transport temperature control unit having cooling and heating cycles for cooling and heating a conditioned space within a transport, the temperature control unit including a programmable temperature range, the method comprising:

- 5 programming a first pre-programmed control mode into the unit;
- configuring the unit such that a second control mode is programmable into the unit by an end user;
- querying the end user to select numerical temperature values for the programmable temperature range;
- 10 querying the end user to select the first pre-programmed control mode for operation of the programmable temperature range or to program the second control mode into the programmable temperature range for operation of the programmable temperature range; and
- programming the second control mode into the programmable temperature range by the end user when the second control mode is desired by the end user.

24. The method as claimed in claim 23, wherein the programmable temperature range is operable to control the operation of the unit in the conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode.

25. The method as claimed in claim 23, wherein the numerical temperature values include a minimum temperature value and a maximum temperature value.

26. The method as claimed in claim 23, further including the step of
programming a priority for the programmable temperature range by the end user.

27. The method as claimed in claim 23, further including the step of
5 programming a unit control mode for the programmable temperature range.

28. The method as claimed in claim 27, wherein the step of programming a unit
control mode for the programmable temperature range further includes selecting one of a
cycle sentry mode, a continuous mode and a cycle sentry/continuous select mode.

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29. The method as claimed in claim 27, wherein the unit control mode is one of
a cycle sentry mode, continuous mode and a cycle sentry/continuous select mode.

15 30. The method as claimed in claim 23, wherein the step of programming the
second control mode into the programmable temperature range by the end user when the
second control mode is desired by the end user further includes the step of selectively
programming a fuel saver timer operable to decrease fuel consumption of the unit.

20 31. The method as claimed in claim 23, wherein the step of programming the
second control mode into the programmable temperature range by the end user when the
second control mode is desired by the end user further includes the step of programming a
high speed cool to low speed cool switch point at which point the unit switches between
high speed cool and low speed cool in the conditioned space.

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32. The method as claimed in claim 23, wherein the step of programming the second control mode into the programmable temperature range by the end user when the second control mode is desired by the end user further includes the step of programming a restart temperature at which temperature the conditioned space restarts from a null
5 condition.

33. The method as claimed in claim 23, wherein the step of programming the second control mode into the programmable temperature range by the end user when the second control mode is desired by the end user further includes the step of programming
10 fan operation of the unit in the conditioned space.

34. The method as claimed in claim 23, wherein the step of programming the second control mode into the programmable temperature range by the end user when the second control mode is desired by the end user further includes the step of programming a
15 low speed heat to low speed cool switch point at which point the unit switches between low speed heat and low speed cool in the conditioned space.

35. The method as claimed in claim 23, wherein the step of programming the second control mode into the programmable temperature range by the end user when the second control mode is desired by the end user further includes the step of programming
20 door switch options by the end user.

36. The method as claimed in claim 23, wherein the conditioned space is a first conditioned space and the programmable temperature range is a first programmable temperature range, the transport further comprising a second conditioned space and the unit further comprising a second programmable temperature range, the second 5 programmable temperature range being operable to control the operation of the unit in the second conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode.

37. The method as claimed in claim 36, wherein the first programmable 10 temperature range and the second programmable temperature range are both operable by the first pre-programmed control mode.

38. The method as claimed in claim 36, wherein the first programmable temperature range and the second programmable temperature range are both operable by 15 the second control mode.

39. The method as claimed in claim 36, further including the step of selecting a first unit control mode for the first programmable temperature range and a second unit control mode for the second programmable temperature range.

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40. The method as claimed in claim 39, wherein the first and second unit control modes are one of a cycle sentry mode, a continuous mode and a cycle sentry/continuous select mode.

41. The method as claimed in claim 40, further including the step of selecting a first priority for the first programmable temperature range and a second priority for the second programmable temperature range by the end user.

5 42. The method as claimed in claim 41, wherein the first priority and the second priority are different priorities.

43. The method as claimed in claim 42, further including the step of determining which of the first priority and the second priority are a higher priority.

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44. The method as claimed in claim 43, further including the step of operating the temperature control unit in the unit control mode corresponding to which of the first priority and the second priority have the higher priority.

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45. A transport temperature control unit having cooling and heating cycles for cooling and heating a conditioned space within a transport, the unit comprising:

a first pre-programmed control mode being programmable into the unit; and

a second control mode being programmable into the unit by an end user, the

5 end user selectively determining whether the first pre-programmed control mode is selectable to control operation of the unit within the conditioned space or the second control mode is programmable into the unit to control operation of the unit within the conditioned space;

wherein the second control mode is programmable into the unit by the end

10 user when the second control mode is desired by the end user.

46. The transport temperature control unit as claimed in claim 45, further comprising a selectively determinable fuel saver timer operable to decrease fuel consumption of the unit, the fuel saver timer being selectively determinable by the end

15 user.

47. The transport temperature control unit as claimed in claim 45, further comprising a high speed cool to low speed cool switch point, the high speed cool to low speed cool switch point determining at which temperature the unit switches between high speed cool and low speed cool in the conditioned space, the high speed cool to low speed cool switch point being selectively determinable by the end user.

48. The transport temperature control unit as claimed in claim 45, further comprising a restart temperature, the restart temperature determining the temperature at which the conditioned space restarts from a null condition, the restart temperature being selectively determinable by the end user.

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49. The transport temperature control unit as claimed in claim 45, further comprising fans, operation of the fans being selectively determinable by the end user.

50. The transport temperature control unit as claimed in claim 45, further 10 comprising a low speed heat to low speed cool switch point, the low speed heat to low speed cool switch point determining at which temperature the unit switches between low speed heat and low speed cool in the conditioned space, the low speed heat to low speed cool switch point being selectively determinable by the end user.

15 51. The transport temperature control unit as claimed in claim 45, further comprising door switch options, the door switch options being selectively determinable by the end user.

52. The transport temperature control unit as claimed in claim 45, further 20 comprising a programmable temperature range, the programmable temperature range being operable to control the operation of the unit in the conditioned space by being selectively operable to utilize one of the first pre-programmed control mode and the second control mode.

53. The transport temperature control unit as claimed in claim 52, wherein the programmable temperature range further includes numerical temperature values.

54. The transport temperature control unit as claimed in claim 53, wherein the 5 numerical temperature values include a minimum temperature value and a maximum temperature value.

55. The transport temperature control unit as claimed in claim 52, wherein the programmable temperature range further includes a priority, the priority being selectively 10 determinable by the end user.

56. The transport temperature control unit as claimed in claim 52, further comprising a unit control mode for the programmable temperature range, the unit control mode being selectively determinable by the end user.

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57. The transport temperature control unit as claimed in claim 56, wherein the unit control mode is one of a cycle sentry mode, continuous mode and a cycle sentry/continuous select mode.

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58. The transport temperature control unit as claimed in claim 52, wherein the
conditioned space is a first conditioned space and the programmable temperature range is a
first programmable temperature range, the transport further comprising a second
conditioned space and the unit further comprising a second programmable temperature
range, the second programmable temperature range being operable to control the operation
of the unit in the second conditioned space by being selectively operable to utilize one of
the first pre-programmed control mode and the second control mode.

59. The method as claimed in claim 58, wherein the first programmable
10 temperature range and the second programmable temperature range are both operable by
the first pre-programmed control mode.

60. The method as claimed in claim 58, wherein the first programmable
temperature range and the second programmable temperature range are both operable by
15 the second control mode.